APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,691	09/28/2001	James Ching-Shau Yik	21889	4995

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EXAMINER
ABELSON, RONALD B

ART UNIT	PAPER NUMBER
2666	

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/966,691	YIK ET AL.
	Examiner	Art Unit
	Ronald Abelson	2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>23 November 2003 and 28 September 2001</u>.

2a)☐ This action is **FINAL.** 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 25-29* is/are rejected.

7)☒ Claim(s) *9-24 and 30-34* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>28 September 2001</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>25 November 2003</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

Claim Objections

1.   Claim 4 is objected to because of the following

informalities: On line 2, "diving" should be changed to

"dividing". Appropriate correction is required.

2.   Claim 5 is objected to because of the following

informalities: On line 2, "diving" should be changed to

"dividing". Appropriate correction is required.

Drawings

3.   Figure 1 should be designated by a legend such as --Prior

Art-- because only that which is old is illustrated. See MPEP

§ 608.02(g). Corrected drawings in compliance with 37 CFR

1.121(d) are required in reply to the Office action to avoid

abandonment of the application. The replacement sheet(s) should

be labeled "Replacement Sheet" in the page header (as per 37 CFR

1.84(c)) so as not to obstruct any portion of the drawing

figures. If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required

corrective action in the next Office action. The objection to

the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which

forms the basis for all obviousness rejections set forth in this

Office action:

> (a) A patent may not be obtained though the invention is not identically
> disclosed or described as set forth in section 102 of this title, if the
> differences between the subject matter sought to be patented and the prior
> art are such that the subject matter as a whole would have been obvious at
> the time the invention was made to a person having ordinary skill in the
> art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

5.   This application currently names joint inventors.   In

considering patentability of the claims under 35 U.S.C. 103(a),

the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered

therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to

point out the inventor and invention dates of each claim that

was not commonly owned at the time a later invention was made in

order for the examiner to consider the applicability of 35

U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior

art under 35 U.S.C. 103(a).

6.   Claims 1-8, 25, 26, 28, and 29 are rejected under 35

U.S.C. 103(a) as being unpatentable over Imagawa (US 4,864,558)

in view of Tng (US 6,904,062).

Imagawa teaches a method of exchanging information internal

to a data switching node between at least two internal

components (fig. 4 box 17, 18, fig. 7 box 11, 14).

Imagawa teaches encapsulating the information to be

exchanged in a data frame at a first component (fig. 4 box 17,

header inserters, col. 5 lines 20-24). Note, the examiner

corresponds the applicant's encapsulating with the adding of the

header in the reference.

Imagawa teaches conveying the data between the first

component and a second component via a data exchange medium

(fig. 4 stages 12_1 12_2 12_3, col. 5 lines 30-58).

Imagawa teaches selectively decapsulating the exchanged

information at the second component (fig. 4 box 18, header

eliminators, col. 5 lines 24-28). Note, the examiner corresponds

the applicant's decapsulating with the removal of the header in

the reference.

Imagawa teaches the conveyance of encapsulated information

provides a common exchange format (figs. 4, fig. 7, p-digit

word, k bit header, col. 9 lines 5 - 9) facilitating expansion

(m cascade connected switching stages, n input links, col. 2

lines 24-29: note both m and n can be expanded since there are

not upper bounds on the values).

Although Imagawa teaches a generalized cascade switch (fig.

7) in a computer environment (col. 1 lines 5-9) wherein the S/P

converters convert input data into a "p" digit word (fig. 7 box

11, serial-parallel conversion, data word of parallel p bits,

col. 8 lines 39-54, col. 9 lines 3-9), the reference is silent

the upgrade and new deployment of features and services. Note,

Imagawa gives an example of "p' being 8 bits (col. 9 lines 17-

21).

Tng teaches a computer / PC environment facilitating the

new deployment of features and services (multimedia, digital

audio, col. 1 lines 14-21). Note, 32 bit S/P converters are used

in the environment of Tng (fig. 2A, circuit 6, col. 3 lines 44-

49). Note, the examiner maintains that Imagawa supports a 32-bit

since the reference provides a generalized framework and "p" is

variable (Imagawa: col. 8 lines 39-54).

Therefore it would have been obvious to one of ordinary

skill in the art, to modify the system of Imagawa by upgrading

the 8-bit S/P converters (fig. 7 box 11) with S/P converters

that produce a 32-bit word output as shown by Tng. The benefit

to this modification is it would allow the switch to operate in

a modern 32-bit PC environment that supports new features and

services such as multimedia digital audio.

Regarding claim 2, encapsulating a data stream (Imagawa:

information data, col. 5 lines 20-24).

Regarding claim 3, encapsulating the data stream, comprises

dividing the data stream into a stream of data granules, each

data frame encapsulating a single data granule (Imagawa: p-digit

word, k-bit header, col. 9 lines 5-9, serial-parallel

conversion, data word of parallel p bits, col. 8 lines 39-54,

col. 9 lines 3-9). The examiner corresponds the data granule of

the applicant with the p-digit word of Imagawa and the

encapsulation process as the step of adding the k-bit header.

Furthermore, the examiner corresponds the applicant's dividing

with the serial-parallel conversion of Imagawa.

Regarding claim 4, encapsulating the data stream comprising
a step of dividing the data stream into a stream of fixed size
data granules (Imagawa: serial-parallel converters, p-digit
word, k-bit header, col. 9 lines 3-9).

Regarding claim 5, dividing the stream into a stream of
granules comprises a step of dividing the data stream into data
granules of at most 32 bytes long. Note, this limitation is met
in the rejection to claim 1 wherein the output of the S/P
converters is a 32-bit word (Tng: 32 bits, col. 3 lines 44-49).

Regarding claim 6, associating a header with each data
granule, the encapsulated data granule representing a payload
corresponding of the corresponding data frame (Imagawa:
information data, p-digit word, col. 9 lines 3-9).

Regarding claim 7, associating a fixed size header with
each data granule (Imagawa: k-bit header, col. 9 lines 5-9).

Regarding claim 8, associating a fixed size header with
each encapsulated data granule comprises the step of associating

an eight bytes long header (Imagawa: fig. 4, m=k, col. 5 lines

17-18). Note, for an eight stage switch m=8, the header length

'k' would be 8 bytes.

Regarding claim 25, encapsulating the exchanged information

comprises encapsulating the exchanged information in a payload

portion of the data frame, the payload portion of the data frame

having a data format (information data, p-digit word, col. 9

lines 3-9).

Regarding claim 26, encapsulating the exchanged information

in at least one data field of a payload portion of the data

frame, the at least one data field having a fixed position

within the data frame (fig. 4 box 17, header inserters insert

the 3-bit header to the information data, col. 5 lines, col. 5

lines 20-24).

Regarding claim 28, signaling a beginning of the conveyance

of the data frame (Imagawa: k-bit header, col. 9 lines 5-9).

Note, the receipt of the first bit of the k-bit header signals

the beginning of the data frame.

Regarding claim 29, signaling an ending of the conveyance of the data frame (p-digit word, col. 9 lines 5-9). Note, the receipt of the "pth" bit in the p digit word signals the end of the data frame.

7.   Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Imagawa and Tng as applied to claim 1 above, and further in view of Holloway (US 2004/0196857).

The combination is silent on conveying empty fields / null data as data padding.

Holloway teaches null data in a frame (frame commences with null data [0053]).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Imagawa and Tng by transmitting null data. This modification can be performed in software.   This would benefit the system by aiding in synchronization (Holloway [0053]).

Allowable Subject Matter

8.   Claims 9-24 and 30-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten

in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (571) 272-3165. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ronald   Abelson

Examiner

Art Unit 2666

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